

THREE NEW PACHYDEMINI AND A KEY TO THE
SPECIES OF THE GENUS *PHOBETUS*
(COLEOPTERA: SCARABAEIDAE)

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ABSTRACT

The new genus and species *Howdenocarus mexicanus* is described from Campeche, Mexico, and compared to the nearctic genera *Gronocarus* and *Fossocarus*. *Phobetus sleeperi* and *Phobetus panamintensis* are described from Baja California and California respectively, and these are included in a new key to the genus *Phobetus*.

The following undescribed species have recently come to my attention.

Howdenocarus Hardy, **new genus**

Derivation: From *Howden*, noted North American Coleopterist; and an undefined termination suggestive of the relationship to *Gronocarus* Schaeffer and *Fossocarus* Howden. Masculine.

Type-species: *H. mexicanus*, n. sp. Head setose; clypeus semicircular; labrum fused with clypeus; maxillary palps elongate, approaching length of stem of antennae; labial palps short, subequal to last segment of maxillary palp; prothorax with apical and lateral marginal bead; wings developed; anterior tibiae tridentate; 6 visible abdominal segments, nos. 2-5 fused at midline; all tarsal claws deeply cleft; antennae 10-segmented, with 3-segmented club; genitalia simple, not spinose.

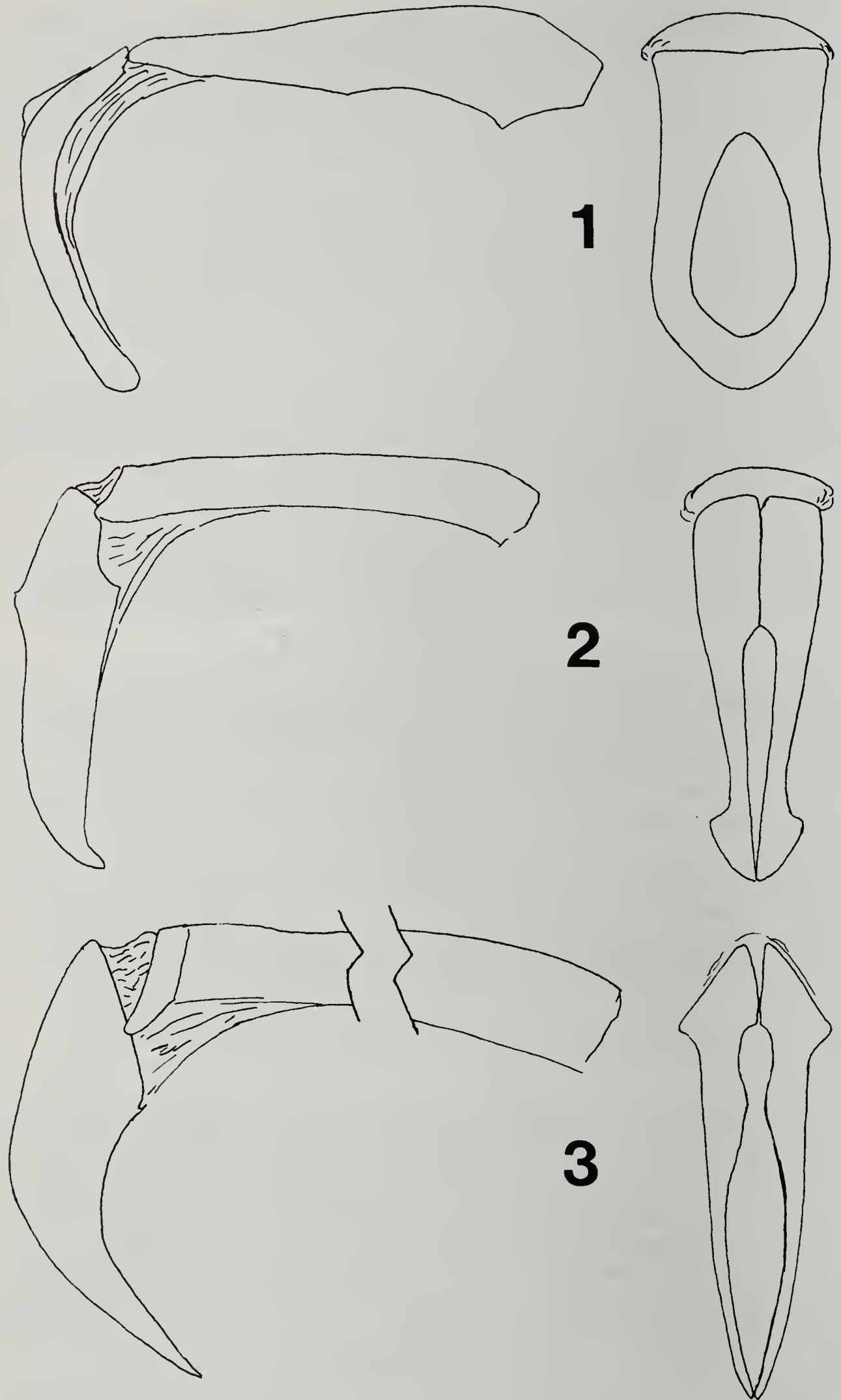
Howdenocarus mexicanus Hardy, **new species**

(Figs. 1, 4, 5, & 10)

Holotype male: 11.7 mm long, prothorax 5 mm wide. Castaneous. Clypeus, vertex deeply concave, deeply punctate, densely bristled (Fig. 10), prothorax shallowly convex, disc uniformly punctate with medium non-setose punctures; marginal bead laterally and anteriorly strongly bristled. Elytra glabrous (except marginal bead, which is sparsely bristled), striae obliterated by uniform medium punctures which are separated by approximately own width; flight wings well developed. Anterior coxae transversely carinate, subconical; anterior tibiae bidentate, anterior tarsi long, subequal to tibial length, claws deeply cleft, similar. Mesotarsi and metatarsi longer than tibial length, claws uniform, cleft. Abdomen with 6 visible segments ventrally, nos. 2-5 fused medially. Male genitalia Fig. 1.

Holotype male: 10 mi North Hopelchen, Campeche, Mexico, IV-17-1962, F. D. Parker Collector (in collection H. F. Howden).

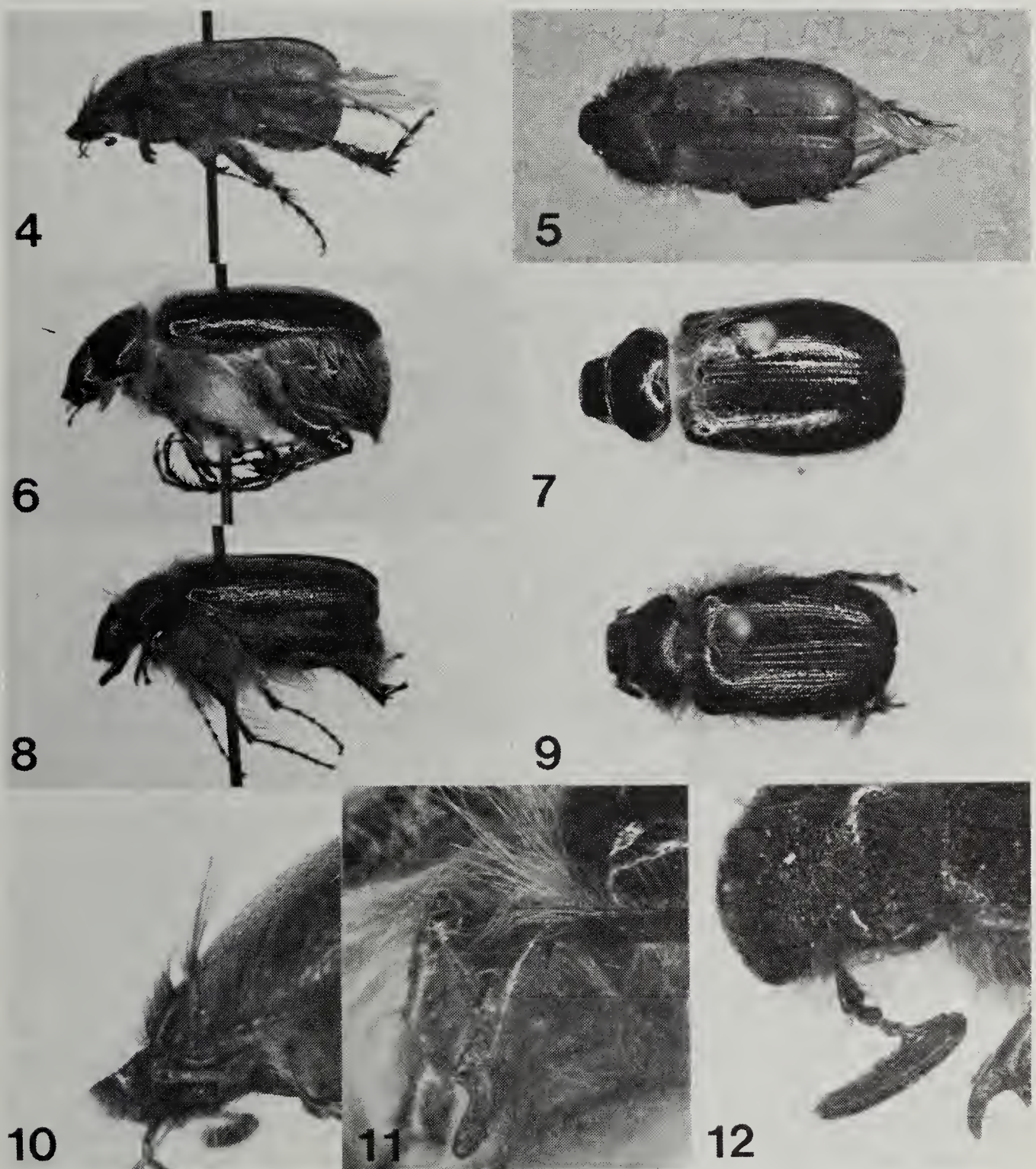
Remarks: This genus is evidently most closely related to the genera *Gronocarus* and *Fossocarus* from the United States. From *Gronocarus*, *Howdenocarus* may be distinguished by the fused abdominal segments, tridentate tibiae, cleft tarsal claws and short antennal club of the latter.



Figs. 1-3, Male genitalia: 1, *Howdenocarus mexicanus*; 2, *Phobetus sleeperi*; 3, *Phobetus panamintensis*.

Howdenocarus differs from *Fossocarus* by the tridentate anterior tibiae, cleft tarsal claws, short antennal club, and the form of the male genitalia.

Traditionally the fusion of the abdominal sternites has been an important character defining Melolonthini, and the main point of separation between Melolonthini and Pachydemini. This then brings into question the placement of *Howdenocarus* and *Fossocarus*, genera with fused abdominal sternites. Unfortunately, at the present time, both tribes are poorly known and inadequately defined. Further study of the tribal placement of these genera must depend on a review of the higher classification of the Melolonthinae, now underway. Until such a redefinition, these genera should remain in Pachydemini.



Figs. 4, 5 and 10: *Howdenocarus mexicanus*. Figs. 6, 7, and 11: *Phobetus panamintensis*. Figs. 8, 9, and 12: *Phobetus sleeperi*.

Phobetus sleeperi Hardy, **new species**

(Figs. 2, 8, 9, & 12)

Holotype male: length 11.7 mm, width of prothorax 4.25 mm. Fuscous. Clypeus and front densely, closely punctate, with short, semierect hairs; vertex smooth, few fine punctures laterally. Prothorax with marginal bead complete, long erect (pale brown) hairs along margin and scattered over anterior portion of disc, posterior prothoracic margin with dense hairs. Elytra wrinkled, striae faintly visible, long, pale brown hairs anteriorly and along margin. Pygidium finely rugulose to smooth, with scattered long, erect, pale brown hairs. Antennae 9-segmented, with 6-segmented club (Fig. 12); anterior tibiae tridentate, anterior tarsi long. Claws equal, cleft, (posterior tarsi missing). Thorax ventrally covered with dense, long, pale brown hairs. Six visible sternites, all free. Male genitalia Fig. 2.

Holotype male, CAS# 13095: Mexico, Baja California Norte, 5 mi E. El Rosario I-23-76, E. L. Sleeper.

Remarks: This species would key to the *comatus* group in Cazier's 1937 key. The 6-segmented antennal club distinguishes it from other species in this group, which all have 3-segmented clubs. This species most closely resembles *P. robinsoni* Saylor, which differs in the antennal club and in having pile less dense and white rather than testaceous. The male genitalia resembles that of *P. comatus*.

This species is named in recognition of the fine contributions to entomology made by Dr. E. L. Sleeper of California State University at Long Beach.

Phobetus panamintensis Hardy, **new species**

(Figs. 3, 6, 7, & 11)

Holotype male: length 14 mm, width 4.8 mm. Fuscous, appearing piceous to the naked eye. Clypeus semicircular, margin reflexed, clypeus and front glabrous, closely, contiguously punctured with medium punctures, vertex black. Prothorax with complete marginal bead, glabrous on disc, with scattered fine punctures. Lateral and posterior marginal bead with long, fine, erect white hairs. Lateral areas darker than disc. Elytra anteriorly with few fine, erect white hairs, surface plane, striae only faintly indicated, pygidium with few erect light hairs, Antennae 10-segmented, club 3-segmented. Length of apical segment of maxillary palp subequal to first (two-thirds length of first two combined). Anterior tibiae tridentate, thorax ventrally with dense, long white erect hairs. Ventral abdominal segments with scattered long erect white hairs. Male genitalia Fig. 3.

Allotype female: Differs from holotype as follows: length 17.2 mm, width 5.4 mm, antennal club smaller; pubescence less dense, abdomen larger; pygidium more convex.

Paratypes: males 13 to 15 mm; female 17 mm; agree with types.

Holotype male (CAS# 13094), allotype female, and 4 paratypes (3 male, 1 female): California, Inyo Co., Panamint Dunes IV-27/28-1974, E. L. Sleeper Collr. 1 male paratype: California, Inyo Co., Panamint Valley Dunes 2200' IV-28-1974, A. R. Hardy and T. D. Eichlin Collectors, Blacklight. Primary types at CAS, paratypes in California State University at Long Beach Insect Collection and collection of the author.

Remarks: This species keys to Cazier's *testaceus* group, since it lacks hairs on the prothoracic disc. The species most closely resembles *P. palpalis* but lacks the enlarged maxillary palps, is smaller, more parallel in form, and the anterior tibial teeth are not as acute (Fig. 11). It differs from *P. mojavus* by the dark coloration, smaller size, form of the anterior tibiae, and slightly less elongate pygidium. The male genitalia resembles those of *P. palpalis* and *P. mojavus*.

A KEY TO THE SPECIES OF *Phobetus*
(MODIFIED FROM CAZIER 1937)

1. Anterior portion of pronotum with large punctures, posterior and anterior margins (as well as, usually, disc) with long, erect setae (*comatus* group)..... 2
- 1'. Anterior portion of pronotum without large punctures, sparsely, shallowly, evenly punctured, anterior margin without erect setae (*testaceus* group) 6
- 2(1). Pronotum black; suture and other margins of elytra black; beneath black; pile white; antennal club of 3 to 4 segments; 11-12 mm; Los Angeles, San Bernardino, Riverside Cos., California..... *P. saylori* Cazier
- 2'. Not as above 3
- 3(2'). Antennal club of 3 segments (Western United States) 4
- 3'. Antennal club of more than 3 segments (5 or 6) (Baja California)..... 5
- 4(3). Pile yellow or orange; 12-17 mm; Klamath Co., Oregon to San Diego Co., California..... *P. comatus* Le Conte and varieties
- 4'. Pile white; 11-13 mm; San Diego Co., California *P. robinsoni* Saylor
- 5(3'). Antennal club with 5 segments; pile white; color generally pale-testaceous; 11-13 mm; Eastern Baja California Norte, Mexico *P. chearyi* Hardy
- 5'. Antennal club with 6 segments; pile brown; color generally fuliginous; 12 mm; Western Baja California Norte, Mexico *P. sleeperi* Hardy, n. sp.
- 6(1'). Pile yellow or orange-brown 7
- 6'. Pile white 9
- 7(6). Front of head and clypeus with long setae; terminal segment of maxillary palp twice as long as broad; pronotum and elytra uniformly testaceous, elytra slightly darker; Channel Islands, California *P. ciliatus* Barrett
- 7'. Front of head and clypeus without setae; terminal segment of maxillary palp over twice as long as broad 8
- 8(7'). Pronotum and elytra uniformly testaceous; Channel Islands, California *P. testaceus* LeConte
- 8'. Pronotum with greater portion dark reddish-brown to piceous; elytra with base and suture dark reddish-brown to piceous; coastal from Monterey to Los Angeles Cos., California *P. humeralis* Cazier
- 9(6'). Male with terminal segment of maxillary palp 1 1/2 times longer than first 2 segments combined, greatly widened; female with terminal segment equal in length to first 2 segments, moderately widened; head piceous to black; pronotum, elytra and undersurface (except legs) black; legs piceous to black; San Bernardino and Riverside Cos., California..... *P. palpalis* Saylor
- 9'. Terminal segment of maxillary palp less than three fourths the length of the first 2 segments, not conspicuously widened or enlarged 10

- 10(9'). Body pile testaceous; head piceous to rufo-testaceous; extreme Southern Inyo Co. to Los Angeles Co., California.....
 *P. mojavus* Barrett
- 10'. Body pile white; body and head fuscous to piceous; Central Inyo Co., California..... *P. panamintensis* Hardy, n. sp.

LITERATURE CITED

- CAZIER, M. A. 1937. A Revision of the Pachydemini of North America. J. Zool. Ent. 29:73-87.



RECORDS OF SOME SCARABS FROM IDAHO
 (COLEOPTERA: SCARABAEIDAE)

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On May 8, 1976, D. C. Shook collected a male and a female of *Liatongus californicus* (Horn) on sagebrush-covered foothills 5 mi. NE of Boise, Ada Co., Idaho. I collected an additional female on May 1, 1977, 4.5 mi. NE of Boise. Hatch (1971), who referred *L. californicus* to the genus *Oniticellus*, reported the only Pacific Northwest locale as extreme southern Oregon east of the Cascades. Specimens in the U.S. National Museum represent only Oregon and Utah. The 3 beetles noted above have been deposited in the USNM.

I collected a male of *Trox scaber* (L.) on June 1, 1974, at a blacklight in Boise. On June 11, 1977, I took a female of *Omorgus suberosus* (Fabr.) from next to a sheep carcass 7 mi. NE of Richfield, Lincoln Co., Idaho. Neither species was recorded from Idaho by Vaurie (1955) or Baker (1968).

My thanks to Oscar L. Cartwright for verifying my identification of the *Liatongus* and for related information. Also, I thank Charles W. Baker for confirming my identification of the *Trox* and *Omorgus*, for determining their sexes, and for other assistance.

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